

Submission of 2012-2013 U.S. Fishery Statistics for the Western and Central Pacific Ocean and Other Areas to the Western and Central Pacific Fisheries Commission¹

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This is the tenth submission of annual U.S. and Territorial fishery statistics by the NOAA's National Marine Fisheries Service (NMFS)² to the Western and Central Pacific Fisheries Commission (WCPFC). The submission consists of preliminary 2013 fisheries data for highly migratory species (HMS) in the Pacific Ocean, and updated data for 2012, unless otherwise indicated. Annual catch and effort estimates are included for U.S. fisheries, including the Participating Territories of American Samoa and Guam, as well as the Commonwealth of the Northern Mariana Islands.

The U.S. annual fishery statistics submitted with this report (Table 1) were derived from data provided by Federal, State and Territorial fishery agencies in the following areas:

1. Hawaii:
 - a. Division of Aquatic Resources (HDAR) Commercial Fisherman's Catch Reports (catch data)
 - b. HDAR Commercial Marine Dealer Reports (landings and size composition data)
 - c. NMFS federal longline logbook (catch and effort data)
2. California, Oregon, Washington:
 - a. Pacific Fisheries Information Network (PacFIN) landings data from U.S. Pacific coast States (landings data)
 - b. NMFS federal Pacific albacore logbook (catch and effort data)
 - c. NMFS federal longline logbook (catch and effort data)
 - d. Recreational Fisheries Information Network (RecFIN)
 - e. California Department of Fish & Wildlife (CDFW) Commercial Passenger Fishing Vessel (CPFV) logbook
 - f. Oregon Department of Fish & Wildlife (ODFW) (albacore port sampling)
 - g. Washington Department of Fish & Wildlife (WDFW) (albacore port sampling)
3. American Samoa:
 - a. Department of Marine and Wildlife Resources (DMWR) boat-based offshore creel

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- surveys (catch, effort, and size composition data)
 - b. NMFS American Samoa longline logbook (catch and effort data)
 - c. NMFS cannery sampling program (size composition data)
 - d. DMWR commercial landings data (commercial sales receipts)
 - e. U.S. South Pacific Tuna Treaty purse seine logbook [and cannery landings data]
4. Guam:
- a. Division of Aquatic and Wildlife Resources (DAWR) offshore creel surveys (catch and effort data)
 - b. DAWR commercial landings data (commercial sales receipts, dealer invoices)
5. Commonwealth of the Northern Mariana Islands (CNMI):
- a. Division of Fish and Wildlife (DFW) commercial landings data (commercial sales receipts, dealer invoices);
 - b. DFW offshore creel surveys (catch and effort data)

Therefore, the U.S. fishery statistics submitted are nominally a compilation of estimated catches and landings based on a number of fishery data sources. Estimated annual catches (Category I data) are based on kept catch only; however, for longline fishery catch and effort (Category II data), the reported aggregate catch includes numbers of discards.

The principal U.S. fisheries for HMS are the purse seine fishery that targets skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), and bigeye tuna (*T. obesus*); the pelagic longline fishery for large tunas and swordfish (*Xiphias gladius*); the albacore troll fishery targeting albacore (*T. alalunga*); the albacore pole-and-line fishery; the tropical troll and handline fisheries targeting various tunas, marlins, and other pelagic species; and the tropical pole-and-line fishery for skipjack tuna. The U.S. purse seine, pelagic longline, and albacore troll fisheries are large-scale fisheries operating on the high seas and in the national zones of the U.S. and various Pacific Island countries. The albacore pole-and-line, tropical skipjack pole-and-line, tropical troll, and handline fisheries are small-scale fisheries operating primarily in near shore waters within the U.S. and Territorial EEZ.

In reports submitted prior to 2008, the high seas troll fishery for albacore was termed the “distant water” troll fishery. Since then it has been termed the “albacore” troll fishery. The fishery operates in temperate waters, mostly in the eastern Pacific near the fleet’s home ports along the U.S. west coast. It catches almost exclusively albacore and is distinguished from the tropical troll fishery which uses tropical island-based small vessels and catches almost no albacore.

In reports submitted prior to 2008, tropical troll fishing, handline fishing, and tropical pole-and-line fishing were combined into a small-scale fisheries category since they comprise a very small fraction of U.S. production. And in some earlier reports, only tropical troll fishing and handline fishing were combined into a small-scale fisheries category. In data submissions from 2008 and onward, fishery catch and vessel count statistics have been listed separately for tropical troll, handline, and tropical pole-and-line fishing.

Three categories of fishery data (Table 1) are provided: 1) Category I -- annual catch estimates by species, and numbers of active vessels by vessel size class, in each fishing fleet (purse seine, longline, albacore troll, tropical troll, handline, skipjack pole-and-line, and albacore pole-and-line), 2) Category II -- catch (in number and weight of fish) and effort data in aggregated form for longline, and albacore troll (including albacore pole-and-line) fisheries, and 3) Category III -- size (length or weight) composition data for key species caught by the longline, tropical troll, handline, and albacore troll (including albacore pole-and-line) fisheries. The methods used in compiling the three categories of fishery statistics are described below.

Category I: Statistics on Annual Catch and Active Vessels

Catch as estimated whole weight (in metric tons) of fish landed, by species and fishery, as well as numbers of active vessels by fishery, were summed in the WCPFC Statistical Area (<http://www.wcpfc.int/doc/scientific-data-be-provided-commission-revised-wcpfc4-2007>), and in the Pacific Ocean north of the Equator. They are provided for the five-year period of 2009-2013 for convenient reference. Estimates for 2013 are considered preliminary, based on database entries as of March 15, 2013 [database “freeze date”]. Estimates for 2012 are updated from statistics submitted last year, and estimates for prior years remain unchanged from last year’s data submission except for noted corrections.

Catch estimates were provided for tunas (albacore, bigeye, Pacific bluefin, skipjack, yellowfin, and others), billfishes (black marlin, blue marlin, sailfish, spearfish, striped marlin, and others), sharks (blue, mako, thresher, oceanic whitetip, silky, hammerhead, and others), and other pelagic fish (mahimahi, moonfish, oilfish, pomfrets, wahoo, and others). United Nations Food and Agriculture Organization 3-alpha species codes are used as species labels. Number of active vessels was provided by gear type, and by gross registered ton categories for purse seine, longline, albacore troll, and tropical pole-and-line vessels.

Longline

U.S. longline fishery statistics are provided for the western and central Pacific Ocean (WCPFC Statistical Area), American Samoa in the North Pacific Ocean, American Samoa in the South Pacific Ocean, Commonwealth of the Northern Mariana Islands in the North Pacific Ocean, Pacific Ocean north of the Equator, and Eastern Pacific Ocean. The Eastern Pacific Ocean is considered to be east of the 150° meridian of west longitude, and for 2009-2013 is also further divided into catches by vessels greater than 24 meters in length and less than or equal to 24 meters.

NMFS logbook data from Hawaii-based and California-based longline fisheries are combined and provided to represent the U.S.-based longline fishery. Catches for the American Samoa longline fishery (NMFS longline logbook data) are tabulated separately. No tabulation is provided for the small longline fishery based in CNMI, as the entire fishery consisted of less than three participants in 2007-2012. Note that because the California-based fishery consisted of a single vessel in 2005-2013, whose catch is reported in combination with the Hawaii-based catches, neither fishery can be reported separately without revealing fisheries-confidential data (by difference).

Retained catches were assigned to the fisheries of the United States, American Samoa, Guam or the CNMI based on the port of landing, the types of permits registered to the vessel, and, during the period November 19–December 31, 2011 or the period November 20–December 31, 2012, whether the vessel was included in an arrangement under Sec. 113(a) of the Consolidated and Further Continuing Appropriations Act, 2012 (Pub. L. 112-55, 125 Stat. 552 et seq.; CFCAA). Specifically, if a fish was landed in one of the three territories (provided it was not caught in the portion of the EEZ surrounding the Hawaiian Archipelago and it was landed by a vessel permitted under the Pelagics FEP or the West Coast HMS FMP), it was assigned to the fishery of that territory; if the fish was landed by a vessel with an American Samoa Longline Limited Access permit (provided it was not caught in the portion of the EEZ surrounding the Hawaiian Archipelago and it was landed by a vessel permitted under the Pelagics FEP or the West Coast HMS FMP), the fish was assigned to the fishery of American Samoa; and if, during the period November 19–December 31, 2011, the period November 20–December 31, 2012, or the period December 5-31, 2013, the vessel landing the fish was included in a valid arrangement under Sec. 113(a) of the CFCAA and the arrangement provided for the fish to be assigned to the fishery of one of the three territories, the fish was assigned to the fishery of that territory. Otherwise, the fish was assigned to the fishery of the United States.

For the Hawaii-based component of the U.S. longline fishery statistics, final estimates of landed weight for each species were derived as the product of number of fish kept (as reported in logbook data) and mean whole fish weight estimated from HDAR Commercial Marine Dealer Reports (landings and size composition data). For each species, mean weights were estimated separately by month of landing for the deep-set (≥ 15 hooks between floats) sector and the shallow-set (< 15 hooks between floats) sector of the Hawaii-based longline fishery, as long as weights were available from at least 20 fish of that species within the sector-month category of interest. If fewer than 20 fish were available in a sector-month category, the species-specific annual average, average across sectors, or other proxy mean weight was applied. Mean weights of bigeye tuna for each fishery sector were estimated in the WCPFC Statistical Area and the EPO separately. Procedures for estimating bigeye tuna weights separately by region were developed to better monitor cumulative landings in relation to catch limits.

Although mean weights were computed by fishery sector when sufficient data were available, the Category I longline statistics in this report are reported for both sectors combined, not separately for deep-set and shallow-set sectors. However, Category II data described below are segregated by deep- and shallow-set fishery sectors.

For the American Samoa-based longline fishery statistics, estimates of landed weight were derived similarly from NMFS American Samoa cannery sampling data; and for the California-based component of the U.S. longline fishery statistics, estimates of landed weight were derived from other mean weight estimates (e.g., from PacFIN).

Purse Seine

Purse seine fishery statistics for the WCPFC Statistical Area are compiled from U.S. South Pacific Tuna Treaty regional purse seine logbook (RPL) data and cannery landings data. Catch estimates are primarily provided for skipjack tuna, yellowfin tuna, and bigeye tuna. Catch estimates for 2012-2013 were based on vessel unloading data reported by fishing captains.

Albacore Troll

Albacore troll fishery statistics are provided separately for the WCPFC Statistical Area and the Pacific Ocean north of the Equator since the range of the fishery in the North Pacific Ocean extends into both the western and central Pacific Ocean and the eastern Pacific Ocean. For the albacore troll fishery in the South Pacific, data are provided by fishing season (July of year x through June of year $x+1$). This U.S. fishery operates only from November through April. Albacore troll fishery statistics are also provided for the Eastern Pacific Ocean (east of 130° W. longitude), and in the area of overlap between the WCPFC and IATTC statistical areas.

Statistics on number of fish caught are compiled from NMFS Pacific albacore logbook data, and then converted to total catch in weight by applying estimates of mean weight. Mean weight estimates are derived from landings data obtained from the PacFIN database system, cannery reports from American Samoa, and reports provided by industry and foreign fisheries agencies pertaining to other localities where U.S. albacore troll vessels may unload their catches.

Other U.S. Fisheries

Tropical troll catch statistics for the WCPFC Statistical Area are based on fishermen's catch data and market landings data from Hawaii, Guam, CNMI, and American Samoa. Offshore creel survey data are also used for Guam, CNMI, and American Samoa.

Handline catch statistics are based on fishermen's catch data and market landings data, and are presented separately for the main Hawaiian Islands and offshore Hawaii.

Recreational catches are not included in the total annual catch estimates for Hawaii or CNMI but are included for American Samoa and Guam, where such data are collected through offshore creel surveys. Recreational catches of albacore and bluefin caught by commercial and private vessels off the U.S. west coast are included in the total annual catch estimates for these species.

Category II: Catch and Effort (Logbook) Statistics

Aggregated catch and effort statistics by species and fishery were compiled for 2012-2013 in the WCPFC Statistical Area and in the Eastern Pacific Ocean (IATTC-N) east of the 150° meridian of west longitude.

Longline

NMFS longline logbook data from U.S.-based (Hawaii and California) and American Samoa-based fisheries are combined into a single data set to calculate aggregated statistics by each month and 5° latitude x 5° longitude block (5° square). Longline data include number of fish caught, number of fish kept, and weight of catch kept for tunas, billfishes, and other pelagic species, and nominal effort in numbers of boats, sets, and hooks, and average number of hooks per float. Data are provided for U.S.-based and American Samoa-based fisheries (Hawaii = HI,

California combined with Hawaii = CH, American Samoa = AS, Commonwealth of the Northern Mariana Islands = CNMI), and are also stratified by number of hooks between floats into deep-set (labelled D; ≥ 15 hooks per float) and shallow-set (labelled S; < 15 hooks per float) categories. United Nations Food and Agriculture Organization 3-alpha species codes are used as species labels.

To meet domestic and WCPFC fisheries data confidentiality requirements, a 3-boat filter was applied to each 5° square x month stratum of summarized data. Data in strata with fewer than 3 boats fishing were further aggregated into annual intervals and larger areas of the Pacific Ocean (termed “quads” in the CAT II longline data files). A simple summary of the results of this data merging or suppression is included in each worksheet of Category II data.

These large areas termed “quads” coincide with RFMO jurisdictions and are labeled WCPFC-N (westward from 150° W and north of the equator), WCPFC-S (westward from 150° W and south of the equator), and IATTC-N (east of 150° W and north of the equator). There were no U.S. longline fisheries operating east of 150° W and south of the equator in 2009-2013. And there were no U.S. fisheries operating in the area of overlap between the WCPFC and IATTC statistical areas, with the exception of the albacore troll fishery in the South Pacific.

Data from the single longliner operating out of California in the eastern Pacific Ocean in 2009-2013 are included in annual quad summaries, combined with data from Hawaii-based vessels in the same quad (fishery = CH).

Albacore Troll

NMFS albacore troll logbook data are used to calculate aggregated catch and effort statistics by month and 1° square block for the North Pacific and South Pacific troll fishery. Albacore troll data include number of albacore caught and effort in numbers of vessels and days fished. These aggregated data also included albacore pole-and-line catch and effort statistics since 2009.

To meet domestic and WCPFC fisheries data confidentiality requirements, a 3-boat filter was applied to each 1° square x month stratum of summarized data. Data in strata with fewer than 3 boats fishing were aggregated into larger time-area strata. A simple summary of the impacts of this data aggregation is included in each worksheet of Category II albacore troll data.

The summarized data provided for the WCPFC area were for the South Pacific albacore troll fishery only except in 2011, as fishing in the North Pacific in the WCPFC area was conducted by fewer than three vessels in 2008-2010 and 2012.

Category III: Size Composition Statistics

Size composition statistics by species and fisheries were compiled in the WCPFC Statistical Area for 2012-2013.

Longline

For the Hawaii longline fishery, individual fish weights (whole weight to the nearest half pound converted to kilograms) are provided for bigeye and yellowfin tuna, albacore, blue and striped marlin, and swordfish. The size data are compiled from the HDAR Commercial Marine Dealer Reports database by linking records from that database with those in the NMFS logbook database for each longline trip, taking into consideration dates of landing and matching commercial marine license numbers in the two data sources. Size data are provided by year, quarter, month, and longline set depth (deep-set = D, shallow-set = S).

For the American Samoa longline fishery, individual fork lengths (to the nearest cm) were measured by the NMFS port sampling program for bigeye tuna, yellowfin tuna, and albacore. A maximum of 50 fish were measured from each longline vessel off-loading at the canneries in American Samoa. Fork length data are provided by year and month.

For the California-based longline fishery, there is no port sampling for size composition data.

The Category I and II estimated longline catch weights (for catch kept) are estimated for the month of catch using the average weight from the Category III data for the month of landing of those catches. For this reason and because 100% matching is not possible, the summed Category III weight data will not match the estimated weight of the catch provided in Category I and II. Monthly means of these average weights by set depth were used to estimate the weights of catches (numbers of fish by set depth) based on landing date for the Category I and II data (above). When fish were landed in processed form (e.g., gilled and gutted), conversion factors were used to estimate the whole weight.

Purse Seine

Size composition statistics by species are collected by NMFS samplers in American Samoa and submitted to FFA and the Commission's data provider directly on a quarterly basis.

Hawaii Tropical Troll and Handline Fisheries

For Hawaii tropical troll and handline fisheries, individual fish weights (whole weight to the nearest half pound converted to kilograms) are provided for yellowfin tuna, skipjack, blue marlin and striped marlin for 2012-2013. The size data are compiled from the HDAR Commercial Marine Dealer Reports database and are provided by year and month. These data are not separated between tropical troll and handline fisheries. Troll and handline operations cannot be distinguished by license numbers, which may represent both types of fishing.

The requirement to submit size data by area has not been met by the data submitted on the longline, tropical troll, and handline fisheries. The available HDAR dealer data do not identify area of catch.

Albacore Troll

Individual albacore fork length measurements (to the nearest cm) for the albacore troll fishery in the North Pacific (2008-2010) and for the albacore pole and line fishery in the North Pacific (2008-2010) were taken by port samplers (trained scientific technicians) as vessels unloaded in California, Washington, and Oregon ports and in Pago Pago, American Samoa. These measurements are grouped by month and area; and are all from the Eastern Pacific Ocean, north of the Equator.

For the albacore troll fishery in the South Pacific, there was no port sampling in 2007-2013.

Table 1. Names and contents of data files provided.

Data Category	Contents	File Name
Category I:	Estimated Annual Catches and Numbers of Active Vessels	
	For: Longline Purse Seine Albacore Troll Tropical Troll Tropical Handline Tropical Pole-and-line	CAT_I_WCPFC_US_2009-2013_4-28-2014.xlsx
Category II:	Aggregated catch and effort (non-confidential strata only)	
	Longline: From U.S.-based and American Samoa-based fleets, separated by deep- and shallow-sets	CAT_II_WCPFC_US 2009-2013_LLnc.xls
	Albacore Troll (including Albacore Pole-and-line)	CAT_II_WCPFC_US_2012-2013_LTL-ALB-SP_SWFSC.xlsx

Data Category	Contents	File Name
Category III:	Size Composition:	
	<p>Longline:</p> <p>Am. Samoa Port Sampling (lengths)</p>	<p>CAT_III_AS_LL_ALB-BET-YFT_2012_FINAL.xlsx</p> <p>CAT_III_AS_LL_ALB-BET-YFT_2013_PRELIM.xls</p>
	<p>Longline:</p> <p>Hawaii State Division of Aquatic Resources Dealer Data (weights) - inferred to be from deep-set or shallow-set longline landings</p>	<p>CAT_III_HI_LL_BET_2012Q1_FINAL.xlsx</p> <p>CAT_III_HI_LL_BET_2012Q2_FINAL.xlsx</p> <p>CAT_III_HI_LL_BET_2012Q3_FINAL.xlsx</p> <p>CAT_III_HI_LL_BET_2012Q4_FINAL.xlsx</p> <p>CAT_III_HI_LL_BET_2013Q1_PRELIM.xlsx</p> <p>CAT_III_HI_LL_BET_2013Q2_PRELIM.xlsx</p> <p>CAT_III_HI_LL_BET_2013Q3_PRELIM.xlsx</p> <p>CAT_III_HI_LL_BET_2013Q4_PRELIM.xlsx</p> <p>CAT_III_HI_LL_ALB-YFT-BUM-MLS-SWO_2012_FINAL.xlsx</p> <p>CAT_III_HI_LL_ALB-YFT-BUM-MLS-SWO_2013_PRELIM.xlsx</p>
	<p>Tropical Troll and Handline:</p> <p>Hawaii State Division of Aquatic Resources Dealer Data (weights) inferred to be from non-longline landings</p>	<p>CAT_III_HI_T-HL_SKJ-YFT_2012_FINAL.xlsx</p> <p>CAT_III_HI_T-HL_BUM-MLS_2012_FINAL.xlsx</p> <p>CAT_III_HI_T-HL_SKJ-YFT_2013_PRELIM.xlsx</p> <p>CAT_III_HI_T-HL_BUM-MLS_2013_PRELIM.xlsx</p>

Data Category	Contents	File Name
Operational Level	Catch and Effort Data	
	Longline: Hawaii	OPERATIONAL_HI_LL_2013.zip
	Longline: American Samoa	OPERATIONAL_AS_LL_2013.zip
	Albacore Troll	OPERATIONAL_ALBACORE-TROLL-SP_2012-2013_SWFSC.zip
Metadata Document:	This Data Report	DR-14-008.pdf